

Serial No. 10/680,836
Bickham et al
Case No. CE10048R

REMARKS

Reconsideration of the above-referenced application is respectfully requested in view of the above amendments and these remarks. Claims 1-24 are currently pending.

In the Office Action, claims 14-24 were allowed. Applicants note with appreciation that the subject matter of these claims has been allowed. Nonetheless, Applicant wishes to continue prosecuting claims 1-13.

Claims 1-7 and 9-13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 6,801,767 to Schwartz et al. in view of United States Patent Application Publication No. 2003/0027597 to LaGronna et al. Applicants have carefully reviewed the Office Action and the cited references and have amended the claims to clarify the claimed invention. Applicants respectfully traverse the rejection. Applicants have amended independent claims 1 and 10 to state that the active radio frequency power device, digital control logic and free-space optical communication interface are housed in a common enclosure such that the active radio frequency power device and the digital control logic send signals between one another over the free-space optical communication device. No new matter is provided by way of this amendment, and the Specification provides for this amendment in at least Figures 2 and 5 and paragraphs [0023-0026].

As seen in the amended claims, the elements of the present invention are completely contained within a radio frequency power device. The present invention uses bi-direction free space optical communication link between the active radio frequency power device and the digital control logic where the communications link, the active radio frequency power device and the digital control logic are all within the same enclosure. The optical signals contain information related to the operation state of an active RF power device. The optical signals also contain control signals to change and/or direct the operational state of the active RF power device. This information is typically at baseband frequencies, not RF, and is totally unrelated to the RF signal intended to be transmitted to users of the communication system.

Schwartz is directed to method and system for distributing multiband wireless communication signals. Downlink RF signals in a plurality of downlink frequency bands are received and then combined into a combined downlink RF signal at a main unit. The

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combined downlink RF signal is subsequently split into multiple downlink RF-parts, which are converted to multiple downlink optical signals and optically transmitted to the remote units. Accordingly, Schwartz teaches the use of a fiber optical RF communication path (367) from a remote location to an optical to RF converter (351) in a main amplifier unit which is then coupled to an active RF device (352). A uni-directional optical signal containing RF signal information that is extracted from an optical signal by the optical-to-RF converter (351) and coupled to the active RF power device (352) for amplification and subsequent transmission to users of a communication system is communicated over the optical fiber (367). The present invention is complete contained within an enclosure, which is in contrast to Schwartz that uses fiber to communicate between remote unites far removed from the main amplifier unit

LaGrotta is directed to a method and apparatus for reducing the cost of an RF base station. In accordance with the LaGrotta, communication between two sections of an RF base station of a wireless communication system is implemented using an over-the-air optical link. LaGrotta provides a free space optical communication (210) to connect an active radio device (240) to a remote location. Within the equipment module, there is no free space optical communication. What is communicated over the free space optical path (210) is an optical signal containing RF signal information intended to be transmitted to users of the communication system. Again, the present invention is contained within an enclosure and the free space optical communication link is provided within the enclosure. LaGrotta, however, uses a free space optical communications link (210) to communicate with a remote unit far removed from the equipment module (240) that contains the RF module and the optical module. The size and cost reductions through integration that are stated in LaGrotta refers to the total communication system cost and equipment footprint. Such reductions are enabled by optical RF links between remote sites instead of wired communication links.

In view of the foregoing, it is respectfully submitted that the combination of Schwartz and LaGrotta does not disclose, teach or otherwise suggest an apparatus or method where an active radio frequency power device, digital control logic and free-space optical communications interface are formed within an enclosure and where the active radio frequency power device and digital control logic provide signals over the free-space

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optical communication interface. Applicants therefore respectfully submit that the claims 1 and 10 are patentable over the cited references. As claims 2-7 and 9 depend upon and include the limitations of claim 1 and claims 11-13 depend upon and include the limitations of claim 10, Applicants also submit that these claims are patentable over Schwartz and LaGrotta for the same reasons as given above. Applicants request that this rejection under Section 103(a) be withdrawn.

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Schwartz in view of LaGrotta and further in view of United States Patent No. 6,448,505 to Hiraoka et al. Assuming that Hiraoka discloses the free-space optical communication interface comprises an emitter structure and a separate detector structure as stated in the Office Action, none of the cited references disclose, teach or otherwise suggest the apparatus wherein the active radio frequency power device, digital control logic and free-space optical communication interface are formed within the enclosure as stated above. For this reason and as claim 8 depends upon claim 1, Applicants respectfully submit that the claim 8 is patentable over the combination of Schwartz, LaGrotta and Hiraoka. Applicants therefore request that this rejection under Section 103(a) be withdrawn.

As the Applicants have overcome all substantive rejections and objections given by the Examiner and have complied with all requests properly presented by the Examiner, the Applicants contend that this Amendment, with the above discussion, overcomes the Examiner's objections to and rejections of the pending claims. Therefore, the Applicants respectfully solicit allowance of the application. If the Examiner is of the opinion that any issues regarding the status of the claims remain after this response, the Examiner is invited to contact the undersigned representative to expedite resolution of the matter.

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Please charge any fees associated herewith, including extension of time fees, to
50-2117.

Respectfully submitted,
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